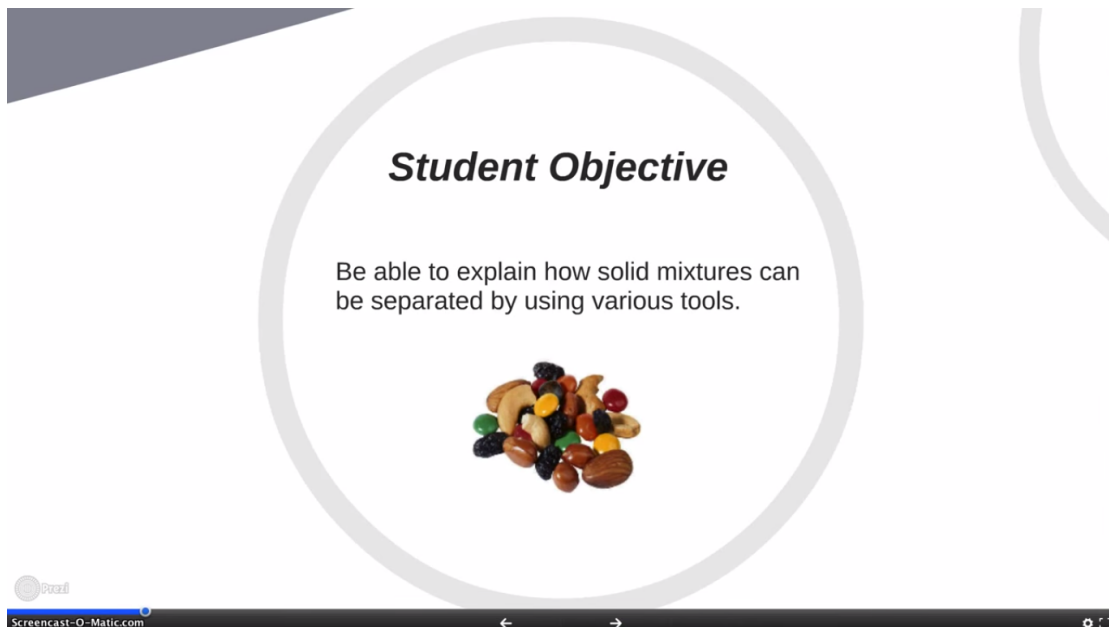


This is a lesson on separating solid mixtures, which would be done in a fifth grade classroom.




1. The objective of the students will be to explain that solid mixtures can be separated by shape, color, particle size, and magnetic attractions using various tools.



2. Students will be in groups with others they will be working with and discussing ideas with.

Students will be in groups with others who they will discuss their ideas with.




A screenshot of a video showing a teacher with long brown hair and glasses sitting at a table with three students. They are all looking at something on the table, and the teacher appears to be explaining or discussing it. The background is a classroom with a green chalkboard.

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3. Before this lesson, students will know the definition of a mixture and would have worked with mixtures before. Students will also know what a solid is compared to a liquid and gas.

Students will know the definition of a mixture and will know what the difference is between a solid, liquid, and gas. Ask students these questions and have them write responses.



A comparison chart showing the properties of solids, liquids, and gases. It includes a photo of M&M's candies for solids, and diagrams for liquids and gases. The chart lists whether each state is rigid, has a fixed shape, and has a fixed volume.

solid	liquid	gas
rigid	not rigid	not rigid
fixed shape	no fixed shape	no fixed shape
fixed volume	fixed volume	no fixed volume

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4. Ask the students about mixtures, such as what they are and how they can be separated. Have students write their response on an index card.

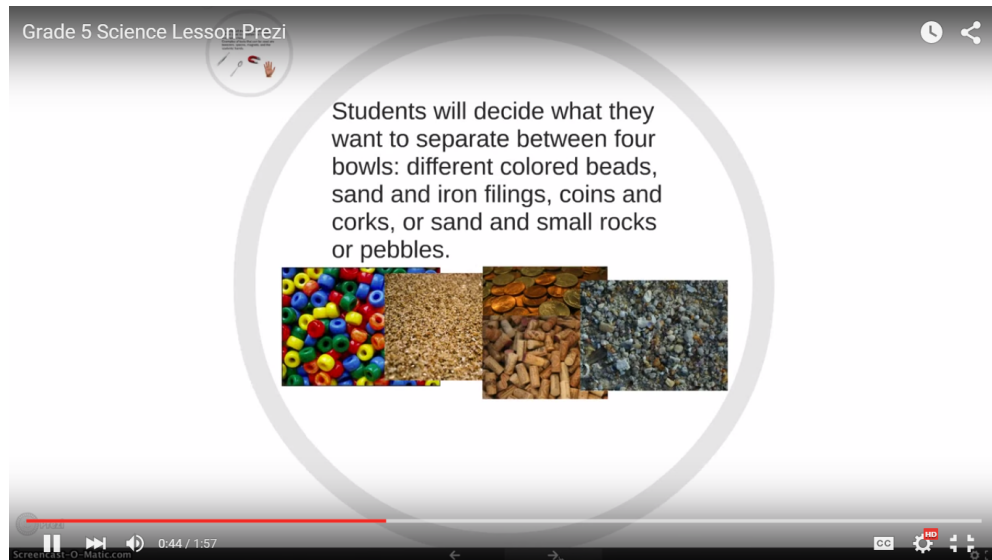
Students will then be given options of mixtures to choose from between 4 bowls that are labelled 1-4.

The first bowl will contain beads of two or more different colors.

The second bowl will contain sand and iron filings.

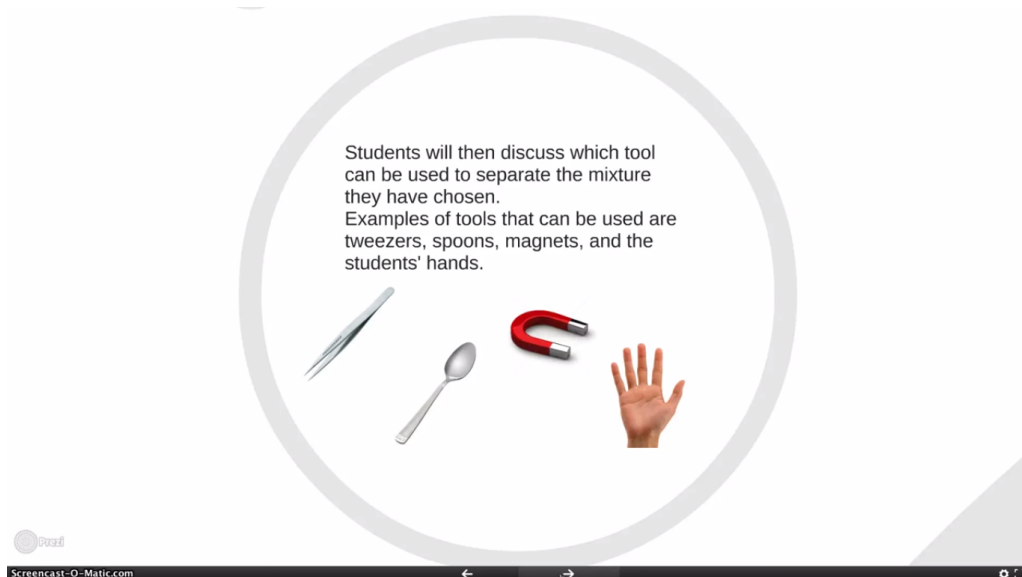
The third bowl will contain coins and corks.

The fourth bowl will contain sand and small rocks or small pebbles.

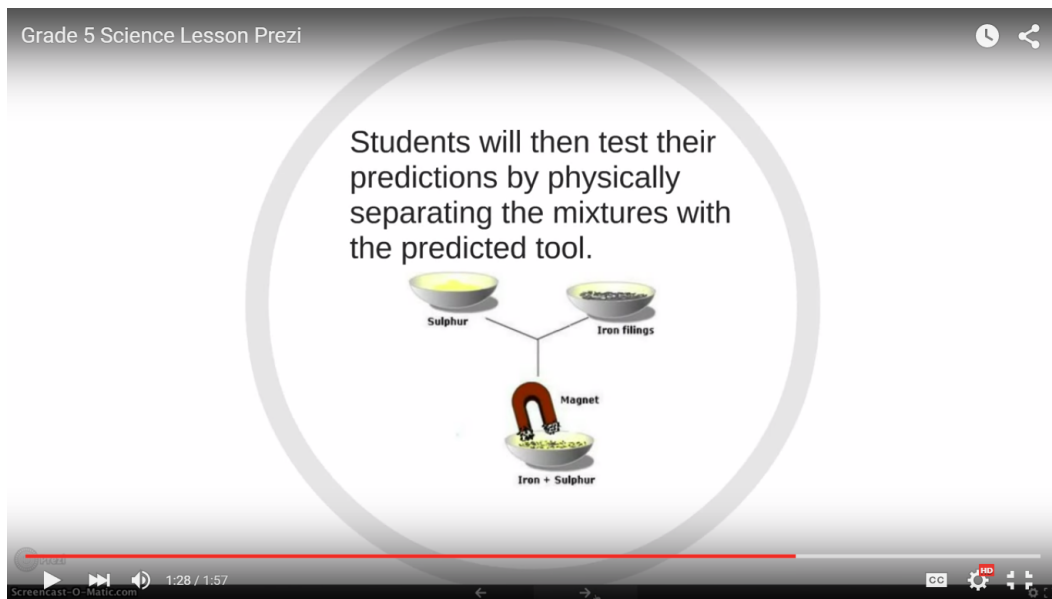


5. After choosing the bowl that has the mixture that will be separated, students will discuss in their group what tool can be used to separate the mixture.

Examples of tools that can be used are tweezers, spoons, magnets, the hands of the students, and anything else the students can use to separate the mixture.



6. Students will then test their predictions by physically separating the mixture with the predicted tool.



7. Students will then discuss what they found and will comment on their predictions, ideas, and how they decided on a tool. This will be done in groups.

After they have discussed how their experiment went, the whole class will discuss what they found by sharing their groups' information.

